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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/579,350

08/16/2007

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127694.00009

2141

84042 7590 10/07/2009
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EXAMINER

ANDERSON, DENISE R

ART UNIT

PAPER NUMBER

1797

MAIL DATE

DELIVERY MODE

10/07/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/579,350	Applicant(s) JACKSON ET AL.	
	Examiner Denise R. Anderson	Art Unit 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 May 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-108 is/are pending in the application.
- 4a) Of the above claim(s) 1-18,33-35,52-60,64-97 and 99-108 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 19-32,36-51,61-63 and 98 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-108 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 May 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>24 July 2006</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Group 1, second sub-species in the reply filed on July 22, 2009 is acknowledged. The traversal is on the ground(s) that "Figures 1 to 4 show perspective and cut-away views of the filtration apparatus, and Figures 5 to 10 represent schematically the fluid flow within the same filtration apparatus during different operational modes. This is not found persuasive. Figs. 1 and 7 are shown below. Fig. 7 shows the Fig. 1 filtration apparatus within a system. As such, the two apparatus sub-species were divided between the filtration apparatus (Figs. 1-4) and the system (Figs. 5-10).

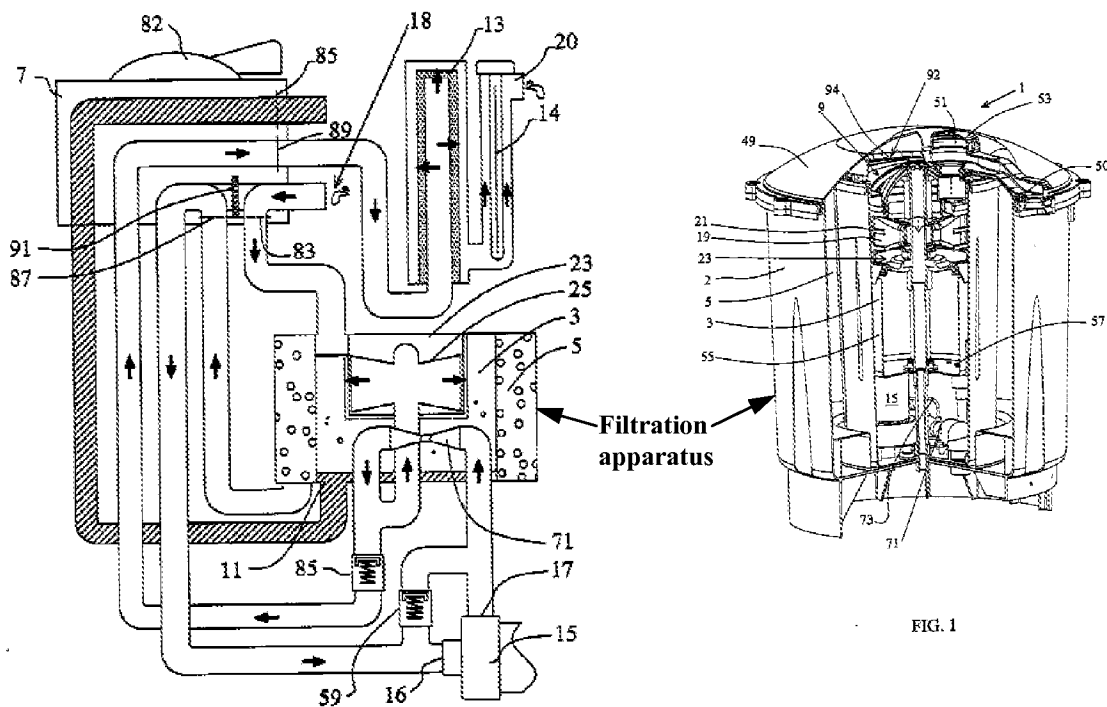


FIG. 7

FIG. 1

2. The requirement is still deemed proper and is therefore made FINAL.

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3. Claims 1-18, 33-35, 52-60, 64-97, and 99-108 withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on July 16, 2009.

Claim Objections

4. Claim 26 is objected to because of the following informality: Claim 26 is not labeled as “Currently amended.” Appropriate correction is required.

Claim Rejections - 35 USC § 102 Statutory Basis

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim Rejections - 35 USC § 103 Statutory Basis

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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7. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim Rejections - 35 USC § 102
Filtration System Recited in Claim 98

9. Claim 98 is rejected under 35 U.S.C. 102(b) as being anticipated by Headrick et al. (U.S. Patent No. 3,291,308, Dec. 13, 1966).

10. Claim 98 appears below in italics with the claimed structure underlined. The patentability analysis follows in normal font.

Claim 98. (Original) A filtration system for filtering water from a body of water, the (filtration) system comprising a filter and a pump, the filter being provided on the suction side of the pump when the (filtration) system is operating in a filtration mode; wherein

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the (filtration) system is adapted to allow water from the body of water to be filtered when the (filtration) system is located above the water level in the body of water.

In Fig. 1, Headrick et al. discloses a filtration system (water purification system) with a filter (cone 15 of 16 mesh screen and cone 16 of 40 mesh screen) and a pump (pump 21). Headrick et al., col. 2, lines 34-35. The filter is on the suction side of the pump and the filtration system is above the water level of the body of water 14 to be filtered, as recited.

Claim Rejections - 35 USC § 102
Filtration System Recited in Claim 19, 24, and 26-32

11. Claims 19, 24, and 26-32 are rejected under 35 U.S.C. 102(b) as being unpatentable over Baker (U.S. Patent No. 4,627,118, Dec. 9, 1986). The claims appear below in italics with the claimed structure underlined. The patentability analysis follows in normal font.

Claim 19. (Original) A filtration system for filtering particulates from a liquid, the (filtration) system comprising a sealed vessel suitable for supporting a pressure less than atmospheric pressure, and a filter for filtering particulates from said liquid.

Claim 24. (Currently Amended) A filtration system as claimed in claim 19 further comprising a pump suitable for reducing the pressure in said sealed vessel to cause liquid to be drawn into the vessel.

Claim 26. A filtration system as claimed in claim 24 further comprising a valve sub-system operable to change the connection of the pump to the sealed vessel.

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Claim 27. (Original) A filtration system as claimed in claim 26, wherein the valve sub-system is operable to connect the pump upstream of the sealed vessel to cause the (filtration) system to operate in a purging mode.

Claim 31. (Currently Amended) A filtration system as claimed in claim 26, wherein the valve sub-system is operable to connect the pump downstream of the sealed vessel to cause the (filtration) system to operate in a filtration mode.

Claim 32. (Original) A filtration system as claimed in claim 31, wherein, when the (filtration) system is operating in the filtration mode, the pump draws the liquid supply into the (filtration) system through a system inlet, the system inlet being connected to at least one conduit having at least one opening.

Claim 28. (Original) A filtration system as claimed in claim 27, wherein, when the (filtration) system is operating in said purging mode, the pump introduces a purging liquid into the sealed vessel to flush filtered particulates through a discharge outlet.

Claim 29. (Original) A filtration system as claimed in claim 28, wherein the valve sub-system is operable to open and/or close the discharge outlet.

Claim 30. (Currently Amended) A filtration system as claimed in claim 28, wherein the purging liquid is liquid taken from upstream of the filter.

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12. In Figs. 3, 5, and 8, Baker discloses a filtration system with "a pump drawing a vacuum downstream of the filter bed and recirculating filtered water to the swimming pool." Baker, Abstract, lines 18-20. The filtration system is in a sealed vessel (Figs. 3 and 5, filter tank 10; Fig. 8, filter tank 50) with a filter (Figs. 3 and 5, filter bed 8 with screen 35; Fig. 8 filter bed 77 with screen 75) [claim 19] and the pump causes liquid to be drawn into the sealed vessel [claim 24].

13. Baker discloses there is a valve subsystem that operates to change the connection of the pump [claim 26] such that the pump is downstream of the sealed vessel during filtration mode (Fig. 8, valves 66, 76, and 86 are open – while valves 78, 82, and 83 are closed) [claim 27] and the pump is upstream of the sealed vessel during purging mode (Fig. 8, valves 82 and 83 are open – while valves 66, 76, 78, 86 are closed [claim 31]. Baker, col. 15, lines 63 to col. 16, line 2; col. 17, lines 30-45. Similarly, in Fig. 5, Baker discloses a valve subsystem that operates to change the connection of the pump [claim 26] such that the pump is downstream of the sealed vessel during filtration mode (Fig. 5, valves 15, 16, and 27 are open – while valves 28 and 41 are closed) [claim 27] and the pump is upstream of the sealed vessel during purging mode (Fig. 8, valves 41 and 32 are open – while valves 15, 16, 27, and 28 are closed [claim 31]. Baker, col. 11, lines 63 to col. 12, line 3; col. 13, lines 32-49.

14. When the Baker filtration system is operating in filtration mode, the pump draws the liquid supply into the filtration system through a system inlet (Fig. 5, inlet line connection 1; Fig. 8, main drain line 52) [claim 32]. When the Baker filtration system is operating in purging mode, the pump introduces purged liquid into the vessel to flush particulates through a discharge outlet (Fig. 5, outlet line 5; Fig. 8, backwash line 80) [claim 28], which is opened and closed by

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the valve subsystem (valve 82) [claim 29]. The purging liquid is taken upstream of the filter (Fig. 5, filter bed 8 and screen 35; Fig. 8, filter bed 77 and screen 75) [claim 30] from swimming pool P through drain D.

Table Provided That Keys Claimed Structure To Hansen et al. As Primary Reference

15. Table 1 below keys the claimed apparatus structure, with specification support, to that of the prior art. Hansen et al. is the primary reference.

16. Hansen et al. discloses a water treatment system with a "treatment tank [that] may form part of a water softener, deionization unit or a mechanical filter." Hansen et al., Abstract, line 1 and col. 2, lines 13-15. In Fig. 1, Hansen et al. further teaches that the water treatment system has a valve sub-system (control valve assembly 14) connected to a controller that "controls the regeneration of an exhausted tank . . . operative to provide a final rinse in the service direction" just after "the counter-flow rinse step." Hansen et al., Abstract, line 1, 5, and 7-10 and col. 8, lines 40-41. In other words, the rinses are part of the recited purging cycle. The service direction refers to the flow direction during the filtration cycle. Regarding the rinses, Hansen et al. discloses, "This is accomplished by a purge valve (part of the recited valve sub-system) . . . [that] is responsive to fluid signals applied to an inlet valve (the valve on the recited inlet system) and an outlet valve (the valve on the recited discharge outlet) associated with the tank being regenerated. More specifically, the fluid signals that close the outlet valve and open the inlet valve, are utilized to cause the opening of the purge valve in order to communicate the tank outlet (the recited discharge outlet) with the drain (as shown in applicant's Fig. 8 purging mode)." Hansen et al., Abstract, lines 7-10 and 12-18.

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17. Regarding the recited filter cleaning apparatus, Hansen et al. discloses, "The system controller also includes an improved regeneration control turbine (part of applicant's filter cleaning apparatus) which includes a plurality of vanes extending from a hub and positioned between disc-like members that overlie the edges of the vanes in order to create cavities for receiving fluid emitted by a regeneration control nozzle." Hansen et al., Abstract, lines 19-24.

Regarding Figs. 1 and 2, Hansen et al. continues, "The turbine 142 is mechanically coupled to the regeneration disk 120 so that rotation of the turbine effects rotation of the control disk."

Hansen et al., col. 5, lines 26-29. Regarding Fig. 2, Hansen et al. further teaches, "The ports and regeneration control disk 120 are arranged so that as the regeneration wheel 120 rotates, the valves are sequentially operated in order to cycle the exhausted tank through a regeneration cycle." Hansen et al., col. 4, lines 49-53. As such, this is part of the recited filter cleaning apparatus that is rotatable around a tube with a closure member at one end.

18. Table 1 below keys the claimed apparatus structure, with specification support, to that of the prior art. In the following sections, the claims appear in italics with the keyed structure underlined. The patentability analysis is interspersed amongst the claims and appears in normal font.

Table 1: Claimed structure keyed to that of the prior art.	
<i>Claimed structure.</i>	<i>Prior art – Hansen et al. is primary reference.</i>
<p><i>Filtration system</i> – Fig. 10, filtration system 1.</p> <p><i>Vessel</i> – Figs. 7 and 8, outside periphery of outer chamber 5. Also referred to as housing 2 in specification.</p> <p><i>Filter</i> – Figs. 7 and 8, filter inside of vessel.</p> <p><i>First chamber</i> – Figs. 7 and 8, chamber within vessel.</p> <p><i>Discharge outlet</i> – Fig. 7, discharge outlet 11.</p> <p><i>System inlet</i> – Figs. 7 and 8, system inlet port 18.</p>	<p><i>Filtration system</i> – Fig. 1, water treatment system.</p> <p><i>Vessel</i> – Fig. 1, tanks 10 and 12.</p> <p><i>Filter</i> – “The tank defines a fluid flow path through which water to be treated is passed. The treatment tank may form part of a water softener, deionization unit or a mechanical filter.” Hansen et al., col. 2, lines 12-15.</p> <p><i>First chamber</i> – Fig. 1, chambers within tanks 10 and 12.</p> <p><i>Discharge outlet</i> – Fig. 1, “tank outlet passages 104, 106 of tanks 10, 12, respectively.” Hansen et al., col. 4, lines 11-12.</p> <p><i>System inlet</i> – Fig. 1, “source of water to be treated” 16. Hansen et al., col. 3, lines 47-48.</p>
<i>Pump</i> – Figs. 7 and 8, pump 15.	<i>Pump</i> – Source of water to be treated provides pressure differential across filter. Source of regeneration solution provides pressure differential across the filter.
<i>Venturi</i> – Figs. 7 and 8, venturi 71.	<i>Venturi</i> – Fig. 1, venturi 260a.
<i>Valve sub-system</i> – Figs. 7 and 8, change-over valve system 7.	<i>Valve sub-system</i> – Fig. 1, control valve assembly 14.
<i>UV light module</i> – Figs. 7 and 8, ultraviolet light module 14.	<i>UV light module</i> – Reid, Figs. 1-4.
<p><i>Filter cleaning apparatus</i> – Figs. 7 and 8, shown with rotatable member 25 with openings, tubular member, and closure member.</p> <p><i>Flow compensating device</i> – Figs. 7 and 8, valve that changes flow rate to filter cleaning apparatus.</p>	<p><i>Filter cleaning apparatus</i> – Figs. 1-3, turbine 142, regeneration control disc 120, port insert 122 with ports to control regeneration cycle. Racine, Figs. 1 and 10, piston 48 discloses the specific embodiment recited in claims 46-51.</p> <p><i>Flow compensating device</i> – Fig. 1, fluid flow regulating element 264 in conjunction with drain valves 130 and 132. Hansen et al., col. 5, lines 48-51, lines 8-11, and lines 40-47. This provides a controlled flow of water from collection chamber 110 into the filter cleaning apparatus,</p>
<i>Pressure relief valve</i> – Figs. 5, 7, and 8, pressure relief valve 59.	<i>Pressure relief valve</i> – Magorien et al., figure with pressure relief valve 99 to control partial pressure at venturi 17 using flow rate of pump 19, downstream from filter 25.

Claim Rejections - 35 USC § 102
Filtration System Recited in Claims 19-26, 36-40, 45-51, and 61-63

19. Claims 19 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Hansen et al. (U.S. Patent No. 6,214,214 B1, Apr. 10, 2001). The claims appear below in italics with Table 1's keyed structure underlined.

Claim 19. (Original) A filtration system for filtering particulates from a liquid, the (filtration) system comprising a sealed vessel suitable for supporting a pressure less than atmospheric pressure, and a filter for filtering particulates from said liquid.

Claim 20. (Original) A filtration system as claimed in claim 19, wherein a first chamber is defined in the sealed vessel and the filter is provided in said first chamber.

As shown in Table 1, Hansen et al. discloses a filtration system in a vessel with a filter provided in a chamber. Hansen et al. further teaches a filtration system with a "treatment tank [that] may form part of a water softener, deionization unit or a mechanical filter." Hansen et al., Abstract, line 1 and col. 2, lines 13-15. As such, Hansen et al. discloses a filtration system in a sealed vessel suitable for supporting a pressure less than atmospheric. The filter is a mechanical filter that filters particulates from a liquid.

20. In summary, Hansen et al. anticipates claims 19 and 20.

Claim Rejections - 35 USC § 102
Filtration System Recited in Claims 19-26, 36-40, 45-51, and 61-63

21. Claim 21-26 and 61-63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hansen et al. (U.S. Patent No. 6,214,214 B1, Apr. 10, 2001) as applied to claim 19 above, in view of Magorien et al. (U.S. Patent No. 3,726,063, Apr. 10, 1973) for the pump configuration to

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control partial pressure downstream of the filter. The claims appear below in italics with Table 1's keyed structure underlined. The patentability analysis follows in normal font.

Claim 24. (Currently Amended) A filtration system as claimed in claim 19 further comprising a pump suitable for reducing the pressure in said sealed vessel to cause liquid to be drawn into the vessel.

Claim 26. A filtration system as claimed in claim 24 further comprising a valve sub-system operable to change the connection of the pump to the sealed vessel.

The claims relating to the pressure relief valve:

Claim 61. (Currently Amended) A filtration system as claimed in claim 19 further comprising a pressure relief valve.

Claim 62. (Original) A filtration system as claimed in claim 61 wherein the pressure relief valve is operable to prevent the pressure in the sealed vessel falling below a predetermined level.

Claim 63. (Currently Amended) A filtration system as claimed in claim 61 further comprising a pump suitable for reducing the pressure in said sealed vessel to cause liquid to be drawn into the vessel, wherein the pressure relief valve is operable to place an outlet of the pump in communication with an inlet of the pump when the pressure in the sealed vessel falls below said predetermined level.

The claims relating to the venturi:

Claim 21. (Currently Amended) A filtration system as claimed in claim 19 further comprising air evacuation means (a venturi) suitable for evacuating air from the (filtration) system.

Claim 22. (Original) A filtration system as claimed in claim 21, wherein the air evacuation means (venturi) is arranged to evacuate air from the sealed vessel.

Claim 23. (Currently Amended) A filtration system as claimed in claim 21, wherein the air evacuation means is a venturi.

Claim 25. (Currently Amended) A filtration system as claimed in claims 23 wherein the venturi is connected on the pressure side of the pump.

22. As shown in Table 1 above, Hansen et al. discloses the claimed invention, including the valve sub-system to change the connection of a pump sending fluid through supply conduit 220 in Fig. 1, as recited in claim 26. Hansen et al. does not teach the pump configuration to control partial pressure downstream of the filter.

23. In the figure, Magorien et al. teaches controlling the partial pressure downstream of filter 25 using a venturi (or aspirator) 17 on the output side of pump 19 – with pump 19 set up to control partial pressure using a pressure relief valve 99 on a bypass line, i.e. the recited “outlet of the pump in communication with an inlet of the pump.” The Magorien et al. pump configuration, with its venturi, is set up to "remove contaminants such as dissolved and entrained gas, water and solids from fluid" in a sealed vessel (holding tank 16 and decontamination tank 34) since "it is . . . known to remove dissolved and entrained gas by subjecting the contaminated

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fluid to a vacuum." Magorien et al., Abstract, lines 1-2 and col. 1, line 67 to col. 2, line 2. As such, Magorien et al. discloses a venturi arranged to evacuate air from a sealed vessel [claim 27]. Regarding the pump configuration, Magorien et al. further teaches that such a setup is "a well known device" and that "[t]he less-than-atmospheric pressure induced in line 24 by the aspirator immediately begins to draw fluid from container 10 through filter 25." Magorien et al., col. 2, lines 48-52 and col. 3, lines 38-41.

24. To recap, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have constructed the Hansen et al. filtration system with the pump configuration to control partial pressure downstream of the filter, as taught by Magorien et al., since Magorien et al. states at col. 2, lines 48-52 and col. 3, lines 38-41, that such a modification is a well known device" and that "[t]he less-than-atmospheric pressure induced in line 24 by the aspirator immediately begins to draw fluid from container 10 through filter 25."

25. In summary, Hansen et al., in view of Magorien et al. for the pump configuration to control partial pressure downstream of the filter, discloses or suggests all limitations recited in claims 21-26 and 61-63.

26. Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hansen et al. (U.S. Patent No. 6,214,214 B1, Apr. 10, 2001) as applied to claim 19 above, in view of Reid (U.S. Patent No. 3,923,663, Dec. 2, 1975) for the ultraviolet light module in post-treatment. The claim appears below in italics with Table 1's keyed structure underlined. The patentability analysis follows in normal font.

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Claim 36. (Currently Amended) A filtration system as claimed in claim 19 further comprising a UV light module.

27. As shown in Table 1 above, Hansen et al. discloses the claimed invention, but does not teach that there is a UV light module for post-treatment. In Figs. 1-4, Reid discloses, "A unitary device for purifying water and other fluids embodying an annular filter surrounding an elongate tube which in turn surrounds and cooperates with an elongate ultraviolet lamp to form a flow channel for fluid to be irradiated. Fluid passing through the filter is conveyed through the flow channel along the length of the lamp to effect sterilization." It would have been obvious to one having ordinary skill in the art at the time the invention was made to have treated the water with a UV light module as taught by Reid, since Reid states in the Abstract, line 7, that such a modification would "effect sterilization."

28. Claim 37-39 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hansen et al. (U.S. Patent No. 6,214,214 B1, Apr. 10, 2001) as applied to claim 19 above, in view of Racine (U.S. Patent No. 6,443,312, Sep. 3, 2002) for projecting cleaning liquid onto the downstream side of the filter with the filter cleaning apparatus. The claim appears below in italics with Table 1's keyed structure underlined. The patentability analysis follows in normal font.

Claim 37. (Currently Amended) A filtration system as claimed in claim 19 further comprising a filter cleaning apparatus for projecting a cleaning liquid onto a downstream side of the filter to dislodge particulates trapped on an upstream side thereof.

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Claim 38. (Original) A filtration system as claimed in claim 37 further comprising a flow compensating device for increasing the proportion of the cleaning liquid directed to the filter cleaning apparatus when the filter is partially blocked.

Claim 39. (Original) A filtration system as claimed in claim 38, wherein the flow compensating device is a spring-loaded valve.

Claim 45. (Currently Amended) A filtration system as claimed in claim 37, wherein the cleaning liquid is supplied to the filter cleaning apparatus by a separate dedicated pump.

29. As shown in Table 1 above, Hansen et al. discloses the claimed invention, but does not teach projecting cleaning liquid onto the downstream side of the filter with the filter cleaning apparatus. In Figs. 1 and 10, Racine teaches such a filter cleaning apparatus in the form of piston 48. Racine further teaches such a device would provide a "self-cleaning filter . . . for filtering incoming dirty liquid and distinctly recuperating clean liquid and waste liquid." Racine, Abstract, lines 1-3. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have projected cleaning liquid onto the downstream side of the filter with the filter cleaning apparatus, as taught by Racine, since Racine states in the Abstract, lines 1-3, that such a modification would provide a "self-cleaning filter . . . for filtering incoming dirty liquid and distinctly recuperating clean liquid and waste liquid."

30. Regarding the flow compensating device, Hansen et al. discloses this in Fig. 1 as the fluid flow regulating element 264 that works in conjunction with spring-loaded drain valves 130 and 132. During the purging cycle, Hansen et al. teaches, "When either of the drain valves 130, 132 are opened (and the respective inlet and outlet valves are both closed), water in the collection chamber 110 is allowed to proceed through the venturi 260a and into the tank being

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regenerated.” Hansen et al., col. 5, lines 48-51 and col. 5, lines 8-11. Hansen et al. further teaches, “The regeneration components include a regeneration fluid aspirator 260 disposed in the collection chamber 110. The aspirator comprises a fluid flow regulating element 264 and a venturi 260a. The outlet of the venturi communicates with the tank outlet passages 104, 106 through branch passages 104a, 106a that include check valves 280, 282. The throat of the venturi communicates with the source of regeneration solution 15.” Hansen et al., col. 5, lines 40-47. As such, this provides a controlled flow of water from collection chamber 110 into the filter cleaning apparatus with a fluid flow compensating device that has a spring-loaded valve, as recited in claims 38 and 39.

31. Regarding the separate dedicated pump for the cleaning liquid [claim 45], Hansen et al. teaches this as part of the source of regeneration solution 15, shown in Fig. 1.

32. In summary, Hansen et al., in view of Racine for projecting cleaning liquid onto the downstream side of the filter with the filter cleaning apparatus, discloses or suggests all limitations recited in claims 37-39 and 45.

33. Claim 46-51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hansen et al. (U.S. Patent No. 6,214,214 B1, Apr. 10, 2001) as applied to claim 19 above, in view of Racine (U.S. Patent No. 6,443,312, Sep. 3, 2002) for projecting cleaning liquid onto the downstream side of the filter with the filter cleaning apparatus as applied to claim 37 and 45 above. The claims appear below in italics with Table 1's keyed structure underlined. The patentability analysis follows in normal font.

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Claim 46. (Currently Amended) A filtration system as claimed in claims 37, wherein the (filter) cleaning apparatus comprises a rotatable member having an outlet for projecting the cleaning liquid onto a surface of the filter.

Claim 47. (Original) A filtration system as claimed in claim 45 wherein the rotatable member (filter cleaning apparatus) is rotatably mounted on a tubular member having at least one side-opening for supplying cleaning liquid to said rotatable member (filter cleaning apparatus).

Claim 48. (Original) A filtration system as claimed in claim 47 further comprising the (filter cleaning apparatus having) a closure member for closing an end of the tubular member and for re-directing liquid introduced into the tubular member through the at least one side-opening.

Claim 49. (Original) A filtration system as claimed in claim 48, wherein the closure member is generally frusto-conical in shape.

Claim 50. (Currently Amended) A filtration system as claimed in claim 48, wherein the closure member is fixedly attached to the tubular member.

Claim 51. (Currently Amended) A filtration system as claimed in claim 48, wherein the closure member is integrally formed with the tubular member.

34. Hansen et al., in view of Racine, discloses the claimed invention. Racine further teaches the particulars of the filter cleaning apparatus recited in claims 46-51. Specifically, in Figs. 1 and 10, Racine discloses that the filter cleaning apparatus (piston 48) is rotatable with an outlet for projecting cleaning solution on a filter [claim 46]. There is a side opening with a closure member for supplying cleaning liquid to the filter cleaning apparatus [claims 47 and 48]. The

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closure member is generally frusto-conical in shape [claim 49] and fixedly attached to the filter cleaning apparatus [claim 50] – but can also be integrally formed [claim 51] as shown in Fig. 12.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have provided the Hansen et al. filtration system with the filter cleaning apparatus, as taught by Racine, since Racine states in the Abstract, lines 1-3, that such a modification would provide a "self-cleaning filter . . . for filtering incoming dirty liquid and distinctly recuperating clean liquid and waste liquid."

35. In summary, Hansen et al., in view of Racine for the particulars of the filter cleaning apparatus, discloses or suggests all limitations recited in claims 46-51.

36. Claim 40 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hansen et al. (U.S. Patent No. 6,214,214 B1, Apr. 10, 2001) as applied to claim 19 above, in view of Racine (U.S. Patent No. 6,443,312, Sep. 3, 2002) for projecting cleaning liquid onto the downstream side of the filter with the filter cleaning apparatus as applied to claim 37 above. The claims appear below in italics with Table 1's keyed structure underlined. The patentability analysis follows in normal font.

Claim 40. (Currently Amended) A filtration system as claimed in claim 37, wherein the cleaning liquid is liquid filtered by the filter.

37. Regarding claim 40, the material or article worked upon does not limit the claim. As stated in MPEP 2115 [R-2], "'Expressions relating the apparatus to contents thereof during an intended operation are of no significance in determining patentability of the apparatus claim.' *Ex parte Thibault*, 164 USPQ 666, 667 (Bd. App. 1969). Furthermore, '[i]nclusion of material or

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article worked upon by a structure being claimed does not impart patentability to the claims.’ *In re Young*, 75 F.2d 996, 25 USPQ 69 (CCPA 1935) (as restated in *In re Otto*, 312 F.2d 937, 136 USPQ 458, 459 (CCPA 1963)).” Claim 40 recites that the cleaning liquid is liquid filtered by the filter and, as such, does not limit claim 40. Claim 40 depends on claim 37 and will be rejected accordingly.

38. In summary, Hansen et al., in view of Racine for projecting cleaning liquid onto the downstream side of the filter with the filter cleaning apparatus, discloses or suggests all claim 40 limitations.

Claim Rejections - 35 USC § 102
Filtration System Recited in Claims 19, 37, and 41-44

39. Claim 19 is rejected under 35 U.S.C. 102(b) as being anticipated by Magorien et al. (U.S. Patent No. 3,726,063, Apr. 10, 1973). The claim appears below in italics with the claimed structure underlined. The patentability analysis follows in normal font.

Claim 19. (Original) A filtration system for filtering particulates from a liquid, the (filtration) system comprising a sealed vessel suitable for supporting a pressure less than atmospheric pressure, and a filter for filtering particulates from said liquid.

40. In the figure, Magorien et al. teaches controlling the partial pressure downstream of filter 25 using a venturi (or aspirator) 17 on the output side of pump 19 – with pump 19 set up to control partial pressure by controlling flow rate with a pressure relief valve 99 on a bypass line. The Magorien et al. pump configuration, with its venturi, is set up to "remove contaminants such as dissolved and entrained gas, water and solids from fluid" in a sealed vessel (holding tank 16 and decontamination tank 34) since "it is . . . known to remove dissolved and entrained gas by

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subjecting the contaminated fluid to a vacuum." Magorien et al., Abstract, lines 1-2 and col. 1, line 67 to col. 2, line 2. Magorien et al. further teaches a sealed vessel (container 10, holding tank 16, and decontamination tank 34) and a filter (filter 25). Magorien et al. discloses, "[F]luid is pumped from a . . . container by a vacuum line connected to an aspirator. The latter is a well known device in which a venturi is placed in a pumped fluid stream to create a partial vacuum." Magorien et al., col. 2, lines 48-52. This is shown in the figure and Magorien et al. further teaches, "The residue of fluid is pumped from holding tank 16 via line 21 and aspirator 17 and returned via line 22. The less-than-atmospheric pressure induced in line 24 by the aspirator immediately begins to draw fluid from container 10 through filter 25." Magorien et al., col. 3, lines 37-41.

41. In summary, Magorien et al. anticipates claim 19.

Claim Rejections - 35 USC § 103
Filtration System Recited in Claims 19, 37, and 41-44

42. Claims 37 and 41-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Magorien et al. (U.S. Patent No. 3,726,063, Apr. 10, 1973) as applied to claim 19 above, in view of Racine (U.S. Patent No. 6,443,312 B1, Sep. 3, 2002) for the filter cleaning apparatus. The claims appear below in italics with the claimed structure underlined. The patentability analysis follows in normal font.

Claim 37. (Currently Amended) A filtration system as claimed in claim 19 further comprising a filter cleaning apparatus for projecting a cleaning liquid onto a downstream side of the filter to dislodge particulates trapped on an upstream side thereof.

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Claim 41. (Currently Amended) A filtration system as claimed in claim 37, wherein the valve sub-system is operable to connect the pump downstream of the sealed vessel to cause the (filtration) system to operate in a filtration mode and the cleaning liquid is supplied to the filter cleaning apparatus only when the (filtration) system is operating in a filtration mode.

Claim 42. (Original) A filtration system as claimed in claim 41, wherein the supply of cleaning liquid is controlled by the valve-subsystem.

Claim 43. (Currently Amended) A filtration system as claimed in claim 37, wherein the valve sub-system is operable to connect the pump upstream of the sealed vessel to cause the (filtration) system to operate in a purging mode; when the (filtration) system is operating in said purging mode, the pump introduces a purging liquid into the sealed vessel to flush filtered particulates through a discharge outlet the purging liquid being introduced into the sealed vessel through said filter cleaning apparatus when the (filtration) system operates in said purging mode.

Claim 44. (Currently Amended) A filtration system as claimed in claim 37 further comprising a pump suitable for reducing the pressure in said sealed vessel to cause liquid to be drawn into the vessel, wherein the cleaning liquid is supplied to the filter cleaning apparatus by the pump.

43. As discussed above, Magorien et al. discloses the claimed invention, including the valve sub-system to connect the pump downstream of the vessel to operate a filtration mode [claim 41]. As such, the Magorien et al. valve sub-system [claim 42] and pump [claim 44] control the supply of cleaning liquid to the filter 25 [claim 42]. Magorien et al. does not teach the filter

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cleaning device within the filter. In Figs. 1-10, Racine teaches that such a filter cleaning apparatus (piston 48) within a filter is known. Racine further discloses projecting a cleaning liquid onto the filter in Fig. 10 [claim 37]. In Figs. 4-6, Racine teaches that cleaning fluid is supplied to the filter cleaning apparatus while in filtration mode [claim 41] on one side of the filter cleaning device and purging mode [claim 43] on the other side of the filter cleaning device. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have provided the Magorien et al. filtration system with the filter cleaning apparatus, as taught by Racine, since Racine states in the Abstract, lines 1-3, that such a modification would provide a "self-cleaning filter . . . for filtering incoming dirty liquid and distinctly recuperating clean liquid and waste liquid."

44. In summary, Magorien et al., in view of Racine for the filter cleaning apparatus, discloses or suggests all limitations recited in claims 37 and 41-44.

Conclusion

45. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Denise R. Anderson whose telephone number is (571)270-3166. The examiner can normally be reached on Monday through Thursday, from 8:00 am to 6:00 pm.

46. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Walter D. Griffin can be reached on 571-272-1447. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

47. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications

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may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/DRA/

/Walter D. Griffin/
Supervisory Patent Examiner, Art Unit 1797